

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended) A method of calibrating an unbalance measuring apparatus, the apparatus including a measuring shaft having a longitudinal measuring axis extending therethrough, the method comprising: including

mounting a balanced test rotary member on the measuring shaft of the unbalance measuring apparatus;

fixing first and second calibration masses to the test rotary member at first and second fixing locations, respectively, the first and second fixing locations being situated in different axial calibration planes;

causing the first and second calibration masses to rotate simultaneously about the measuring axis of the unbalance measuring apparatus in a first calibration run, the rotating first and second calibration masses fixed to the first and second fixing locations, respectively, forming a first simulated calibration mass, the first simulated calibration mass producing first unbalanced forces on the measuring shaft during the first calibration run;

fixing the first and second calibration masses to the test rotary member at third and fourth fixing locations, respectively, third and fourth fixing locations being situated in different axial calibration planes;

causing the first and second calibration masses to rotate simultaneously about the measuring axis of the unbalance measuring apparatus in a second calibration run, the rotating first and second calibration masses fixed to the third and fourth fixing locations, respectively, forming a second simulated calibration mass, the second simulated calibration mass producing second unbalanced forces on the measuring shaft during the second calibration run;

measuring the first and second unbalanced forces; and

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evaluating the measured unbalanced forces to calibrate the unbalance measuring apparatus.

~~causing given calibration masses to rotate about a measuring axis in given axial and radial positions in calibration runs;~~

~~measuring the forces which result from unbalances caused by the calibration masses, and~~

~~evaluating the measured forces for calibration of the unbalance measuring apparatus;~~

~~wherein in a calibration run first and second calibration masses are caused to rotate simultaneously in first and second axial planes about the measuring axis.~~

Claim 2 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are of the same size.

Claim 3 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are of different sizes.

Claim 4 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are caused to rotate about the measuring axis at angular positions ~~which are~~ displaced ~~through~~ 180° relative to each other.

Claim 5 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are caused to rotate about the measuring axis in identical angular positions relative to each other.

Claim 6 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are caused to rotate about the measuring axis at identical radii.

Claim 7 (Currently Amended) ~~A method as set forth in~~ The method of claim 1, wherein the first and second calibration masses are caused to rotate about the measuring axis at different radii.

Claims 8-9 (Currently Canceled)

Claim 10 (Currently Amended) ~~A method as set forth in claim 9 wherein~~ The method of claim 1, further comprising:
measuring and compensating for a residual unbalance of the test rotary member prior to at least one of the first and second calibration runs ~~run~~ residual unbalance of the test rotary member is measured and compensated in calibration of the measuring apparatus.

Claim 11 (Currently Amended) ~~A method as set forth in claim 9 wherein~~ The method of claim 1, further comprising:
measuring and compensating for a residual unbalance of the test rotary member after at least one of the first and second calibration runs ~~run~~ residual unbalance of the test rotary member is measured and compensated in calibration of the measuring apparatus.

Claim 12 (Currently Amended) ~~An~~ A calibration arrangement for calibrating to calibrate an unbalance measuring apparatus, the calibration arrangement comprising:
a measuring shaft having a measuring axis extending longitudinally therethrough,
means supporting a supporting arrangement to support the measuring shaft rotatably about a the measuring axis,
mounting means for mounting a mounting arrangement to mount a balanced test rotary member on the measuring shaft,

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~~fixing means for fixing~~ a fixing arrangement to fix first and second
calibration masses to the test rotary member at respective fixing locations situated
~~to which in a calibration run first and second calibration masses are fixed in~~
different axial calibration planes,

measuring sensors adapted to measure forces ~~operative at~~ on the
measuring shaft when the test rotary member rotates, and

an evaluation ~~means~~ arrangement connected to the measuring sensors and
adapted to evaluate the measured forces in at least two calibration runs for
~~calibration of~~ to calibrate the unbalance measuring apparatus.

Claim 13 (Currently Amended) ~~An arrangement as set forth in~~ The arrangement of claim
12, wherein the first and second calibration masses are ~~arranged~~ displaced relative
~~to each other through an angle of 180° about the measuring axis~~ relative to each
other.

Claim 14 (Currently Canceled)

Claim 15 (Currently Added) A calibration arrangement to calibrate an unbalance measuring
apparatus, the apparatus including a measuring shaft having a measuring axis
extending longitudinally therethrough; a supporting arrangement to support the
measuring shaft rotatably about the measuring axis; and a driving arrangement to
rotate the measuring shaft, the calibration arrangement comprising:

a mounting arrangement to mount a balanced test rotary member on the
measuring shaft;

a fixing arrangement to fix first and second calibration masses to the test
rotary member at respective fixing locations situated in different axial calibration
planes;

measuring sensors adapted to measure forces on the measuring shaft when
the test rotary member rotates; and

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an evaluation arrangement connected to the measuring sensors and adapted to evaluate the measured forces in at least two calibration runs to calibrate the unbalance measuring apparatus.
